

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**




# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,300	05/25/2001	Motoo Nishihara	161349/00	2773
30743	7590	07/06/2004	EXAMINER	
WHITHAM, CURTIS & CHRISTOFFERSON, P.C. 11491 SUNSET HILLS ROAD SUITE 340 RESTON, VA 20190			TANG, KENNETH	
			ART UNIT	PAPER NUMBER
			2127	

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/864,300	<b>Applicant(s)</b> NISHIHARA, MOTOO 	
	<b>Examiner</b> Kenneth Tang	<b>Art Unit</b> 2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2003.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1-18 are presented for examination.

#### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

In claim 1, the term "a packet input" (line 11) is indefinite because it is not made explicitly clear in the claim language whether this refers to the same thing as "an input packet" (line 4) or whether an additional input packet is being introduced. In addition, the term "virtual packet was input" is indefinite because it is not made explicitly clear in the claim language whether this input occurs in the "input packet" of line 4, the "packet input" of line 11, or both.

As to claims 6, 11, and 16-17, they are rejected for the same reasons as stated in the rejection of claim 1.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**2. Claims 1-4, 6-9, 11-14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shobatake et al. (hereinafter Shobatake) (US 5,557,609) in view of Ofek (US 6,442,135 B1).**

3. As to claim 1, Shobatake teaches a pipeline processing type shaping apparatus that calculates a predetermined scheduling time by performing pipeline processing by a pipeline portion concerning an input packet of a plurality of flows and shaping each of these flows (*col. 1, lines 34-35, see Fig. 18, and col. 7, lines 66-67*), including:

A storage part that manages and stores flow information being processed in the pipeline processing portion for each of the flows (*col. 27, lines 24-48*);

Shobatake fails to explicitly teach: a calculating part that calculates the predetermined scheduling time, referring to the flow information regarding the flow of a packet input to the pipeline processing portion, and assuming that a virtual packet was input in which all packets that belong to the flow are connected.

However, Ofek teaches a pipeline processing shaping system which has a scheduling controller that calculates a predetermined scheduling time for packet flows, including virtual packets (*col. 7, lines 48-55, col. 8, lines 39-67 and col. 9, lines 1-10*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of a calculating part that calculates the predetermined scheduling time, referring to the flow information regarding the flow of a packet input to the pipeline processing portion, and assuming that a virtual packet was input in which all packets that belong to the flow are connected to the existing

system of Shobatake because it would be advantageous for a scheduler to know when to schedule packet flows (*col. 8, lines 49-52*).

4. As to claim 2, Ofek teaches the pipeline processing type shaping apparatus wherein the calculating part includes a reading part for reading the flow information of a flow to which this packet belongs from the storage part in response to the input of a packet to the pipeline processing portion and a means for calculating the predetermined scheduling time referring to this read information (*col. 8, lines 39-67*).

5. As to claim 3, Shobatake teaches the pipeline processing type shaping apparatus further including a storage information update part that updates the flow information of the storage part for each of the flows in response to the input of the packet to the pipeline processing portion (*col. 17, lines 41-52*).

6. As to claim 4, Shobatake teaches the pipeline processing type shaping apparatus wherein the storage part has internal registers that are equal to the number of processing blocks of the pipeline processing portion, and each of the internal registers stores the flow information of a packet that belongs to the same flow for which pipeline processing is being processed (*col. 5, lines 40-56, col. 6, lines 4-9, and col. 6, lines 31-41*).

7. As to claim 6, it is rejected for the same reasons as stated in the rejection of claim 1.

Art Unit: 2127

8. As to claim 7, it is rejected for the same reasons as stated in the rejection of claim 2.
9. As to claim 8, it is rejected for the same reasons as stated in the rejection of claim 3.
10. As to claim 9, it is rejected for the same reasons as stated in the rejection of claim 4.
11. As to claim 11, it is rejected for the same reasons as stated in the rejection of claim 1. In addition, Shobatake teaches a recording medium (*see Abstract*).
12. As to claim 12, it is rejected for the same reasons as stated in the rejection of claim 2.
13. As to claim 13, it is rejected for the same reasons as stated in the rejection of claim 3.
14. As to claim 14, it is rejected for the same reasons as stated in the rejection of claim 4.
15. As to claim 16, Shobatake teaches a pipeline processing type shaping apparatus (*col. 1, lines 34-35, see Fig. 18, and col. 7, lines 66-67*), including a unit for performing pipeline processing concerning an input packet of a plurality of flows (*col. 27, lines 24-48*).

Shobatake fails to explicitly teach a unit for calculating a predetermined scheduling time by shaping each of these flows assuming that a virtual packet was input in which packets that belong to the flow are connected. However, Ofek teaches a pipeline processing shaping system which has a scheduling controller that calculates a predetermined scheduling time for packet

Art Unit: 2127

flows, including virtual packets (*col. 7, lines 48-55, col. 8, lines 39-67 and col. 9, lines 1-10*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of a calculating part that calculates the predetermined scheduling time, referring to the flow information regarding the flow of a packet input to the pipeline processing portion, and assuming that a virtual packet was input in which all packets that belong to the flow are connected to the existing system of Shobatake because it would be advantageous for a scheduler to know when to schedule packet flows (*col. 8, lines 49-52*).

16. As to claim 17, it is rejected for the same reasons as stated in the rejection of claim 1.

17. As to claim 18, it is rejected for the same reasons as stated in the rejection of claim 2.

18. **Claims 5, 10, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shobatake et al. (hereinafter Shobatake) (US 5,557,609) in view of Ofek (US 6,442,135 B1), and further in view of Wilford et al. (hereinafter Wilford) (US 6,687,247 B1).**

19. As to claim 5, Shobtake in view of Ofek fails to explicitly teach the pipeline processing type shaping apparatus wherein the flow information includes the sum total of the packet length. However, Wilford teaches a pipeline processing type shaping apparatus wherein the flow information includes the sum total of the packet length (*col. 7, lines 1-5*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the

Art Unit: 2127

feature of the flow information includes the sum total of the packet length to the existing system of Shobtake in view of Ofek because this effectively increases the throughput for packet flows over a network (*col. 7, lines 18-22*). In addition, the total length of the packet is needed to identify the header portion and tail portion of the packets (*col. 7, lines 1-31*).

20. As to claim 10, it is rejected for the same reasons as stated in the rejection of claim 5.

21. As to claim 15, it is rejected for the same reasons as stated in the rejection of claim 5.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (703) 305-5334. The examiner can normally be reached on 8:30AM - 7:00PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2127

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kt  
6/16/04

  
MENG-AL T. AN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100